

What is claimed is:

1. A path for a linear motor, comprising:
  - a first path portion having a plurality of armature windings;
  - at least two branch path portions spaced in a direction of travel from the first path portion, each of the at least two branch path portions including a plurality of armature windings; and
  - a routing system between the first path portion and the at least two branch path portions, the routing system being operative to effect movement of a stage between the first path portion and a selected branch path portion of the at least two branch path portions.
2. The path of claim 1, wherein the routing system is configured to selectively couple the first path portion with the selected branch path portion.
3. The path of claim 2, further comprising a bridge moveable between first and second positions, such that when the bridge is in the first position, the routing system couples the first path portion with one of the at least two branch path portions and when the bridge is in the second position, the routing system couples the first path portion with another of the at least two branch path portions.
4. The path of claim 3, wherein the bridge further comprises at least one bridge path portion moveable with the bridge and configured to couple the first path portion with the selected branch path portion based on the position of the bridge.
5. The path of claim 4, wherein the bridge is moveable along a direction substantially transverse to a direction of travel along the first path portion.
6. The path of claim 5, further comprising a linear motor system operative to selectively move at least part of the bridge relative to the first path portion so that a corresponding bridge path portion couples the first path portion with the selected branch path portion.

7. The path of claim 4, wherein the bridge is rotatable about an axis between at least first and second conditions, the first path portion being coupled to a corresponding one of the at least two branch path portions according to the condition of the bridge.

8. The path of claim 3, further comprising a motor control system, the motor control system being operative to select the selected path portion and control the bridge to effect movement of the stage between the first path portion and the selected path portion based on at least position of the stage moving along the path.

9. The path of claim 2, wherein the routing system further comprises a set of armature windings associated with each respective branch path portion, energization of a selected set of the armature windings of the routing system is operative to effect movement of the stage between the first path portion and the selected branch portion.

10. The path of claim 1, wherein at least one of the at least two branch path portions is at a different level relative to the first path portion.

11. A linear motor system, comprising:  
a path comprising:  
a plurality of armature windings arranged along the path,  
a first path portion, and  
at least two branch path portions spaced in a direction of travel from the first path portion;  
a stage moveable along the path; and  
a router interposed between the first path portion and the at least two branch path portions, the router including armature windings operative to effect movement of the stage between the first path portion and a selected one of the at least two branch path portions.

12. The linear motor system of claim 11, further comprising a bridge moveable between first and second positions, the router being operative to move the bridge to the first position such that the first path portion is connected with one of the at least two branch path portions and operative to move the bridge to the second position such that the first path portion is connected with another of the at least two branch path portions.
13. The linear motor system of claim 12, wherein the bridge further comprises bridge path portions moveable with the bridge and configured to connect the first path portion with the selected branch path portion based on the position of the bridge.
14. The linear motor system of claim 13, wherein the bridge is moveable along a direction substantially transverse to a direction of travel along the first path portion.
15. The linear motor system of claim 14, further comprising a bridge linear motor system operative to selectively move at least part of the bridge relative to the first path portion so that a desired bridge path portion couples the first path portion with the selected one of the at least two branch path portions.
16. The linear motor system of claim 12, wherein at least part of the bridge is rotatable about an axis between at least first and second conditions, the first path portion being connected to the selected one of the at least two branch path portions according to the condition of the bridge.
17. The linear motor system of claim 11, wherein the router further comprises a set of armature windings associated with each respective branch path portion, wherein energization of a selected set of the armature windings of the router is operative to effect movement of the stage in a desired direction between the first path portion and the selected one of the at least two branch portions.

18. The linear motor system of claim 11, wherein at least one of the at least two branch path portions is at a different level relative to the first path portion.

19. The linear motor system of claim 11, further comprising a motor control system, the motor control system being operative to select the selected one of the at least two path portions to effect movement of the stage between the first path portion and the selected path portion based on a position of the stage moving along the path.

20. A path for a linear motor system, comprising:

first path means having field means for providing an electric field relative to a first direction of travel;

second path means having field means for providing an electric field relative to a second direction of travel;

third path means having field means for providing an electric field relative to a third direction of travel; and

means for routing a stage, which is moveable along the path, between the first path means and a selected one of the second and third path means.

21. The path of claim 20, wherein the means for routing further comprises field means for providing an electric field for urging the stage in a desired direction between the first path and the selected one of the second and third path means.

22. The path of claim 20, further comprising means for moving a bridge path means to interconnect the first path means with the selected one of the second and third path means.

23. A linear motor system, comprising:

first path means having field means for providing an electric field relative to a first direction of travel,

at least second and third path means having field means for providing an electric field relative to respective second and third directions of travel;

stage means positioned for movement along the path means; and means for bridging a juncture between the first path means and a selected one of the at least second and third path means to enable movement of the stage means between the first path means the selected one of the at least second and third path means.

24. The linear motor system of claim 23, further comprising control means for selectively controlling each of the field means to effect desired movement of the stage means.

25. A method to facilitate movement of at least one stage along a path in a linear motor system that includes a juncture having at least two branch path portions and a trunk path portion, the method comprising:

detecting the position of the at least one stage relative to the path;  
selecting a route for the at least one stage through the juncture; and  
operatively associating the trunk path portion with one of the at least two branch path portions according to the selected route to enable movement of the at least one stage along the selected route.

26. The method of claim 25, further comprising controlling armature windings of the path to effect movement of the stage along the selected route in a desired direction between the trunk path portion and the one of the at least two branch path portions.

27. The method of claim 26 further comprising moving at least part of a bridge having a bridge path to position the bridge path to interconnect the trunk path portion and the one of the at least two branch path portions according to the selected route.